WE CLAIM:

1   1.   A method for processing a plurality of data records, comprising:

2   setting transaction boundaries among said plurality of data records thereby

3   dividing the plurality of data records into one or more data sets;

4   processing each of the data set thereby producing a multiplicity of results

5   from the one or more transaction sets; and

6   completing the processing of the plurality of data records by synchronizing

7   the transaction boundaries and combining said multiplicity of results.

1   2.   The method of claim 1, wherein the setting of transaction boundaries

2   is performed based on the row count of the data records.

1   3.   The method of claim 1, wherein the setting of transaction boundaries

2   is performed based on the time stamp of the data records.

1   4.   The method of claim 1, wherein the setting of transaction boundaries

2   is performed based on the result of a previous data transformation.

1   5.   The method of claim 1, wherein the setting of transaction boundaries

2   is performed based on a user-defined logic, wherein the user-defined logic is one

3   or more rules defined by a user.

1   6.   The method of claim 5, wherein the user-defined logic is on a real-

2   time basis.

1   7.   The method of claim 5, wherein the rules comprise one or more

2   tables in a database.

1   8.   The method of claim 5, wherein the rules comprise one or more

2   statements defining relationships and actions in a suitable programming language.

1   9.   The method of claim 8, wherein the suitable programming language

2   is one of Generation III Languages (3GL), Generation IV Languages (4GL), and

3   Generation V (5GL) Languages.

1   10.   The method of claim 8, wherein the suitable programming language

2   is an expert system tool.

1   11.   The method of claim 1, wherein said processing comprises at least

2   one of insert, update, delete, aggregation, rank, sort, sequence, and join.

1   12.   A method for performing a series of transformations on a plurality of

2   data records, wherein said series of transformations initiate at a source and

3   conclude at a target, said method comprises:

4   setting transaction boundaries among said plurality of data records at said

5   source thereby dividing the plurality of data records into one or more data sets;

6   propagating the transaction boundaries through the series of

7   transformations from the source to the target;

8   performing said series of transformations based on the one or more data

9   sets thereby producing a multiplicity of results from said series of set-based

10   transformations; and

11   completing the series of transformations by synchronizing the transaction

12   boundaries and combining said multiplicity of results.

1   13.   The method of claim 12, wherein the setting of transaction

2   boundaries is performed based on the row count of the data records.

1   14.   The method of claim 12, wherein the setting of transaction

2   boundaries is performed based on the time stamp of the data records.

1   15.   The method of claim 12, wherein the setting of transaction

2   boundaries is performed based on the result of a previous data transformation.

1   16.   The method of claim 12, wherein the setting of transaction

2   boundaries is performed based on a user-defined logic, wherein the user-defined

3   logic is one or more rules defined by a user.

1   17.   The method of claim 16, wherein the user-defined logic is on a real-

2   time basis.

1   18.   The method of claim 16, wherein the rules comprise one or more

2   tables in a database.

1   19.   The method of claim 16, wherein the rules comprise one or more

2   statements defining relationships and actions in a suitable programming language.

1   20.   The method of claim 19, wherein the suitable programming

2   language is one of Generation III Languages (3GL), Generation IV Languages

3   (4GL), and Generation V Languages (5GL).

1   21.   The method of claim 19, wherein the suitable programming

2   language is an expert system tool.

1   22.   The method of claim 12, wherein the propagating comprises setting

2   and maintaining one or more transaction queues capable of defining the

3   boundaries of the data sets.

1   23.   The method of claim 22, wherein the transaction queues comprise

2   one or more tables in a database.

1   24.   The method of claim 22, wherein said transaction queues are

2   maintained in a computer memory.

1   25.   The method of claim 12, wherein said series of transformations

2   comprise at least one of insert, update, delete, aggregation, rank, sort, sequence,

3   and join.

1   26.   A system for processing a plurality of data records, comprising:

2   means for setting transaction boundaries among said plurality of data

3   records thereby dividing the plurality of data records into one or more data sets;

4   means for processing each of said data set thereby producing a multiplicity

5   of results from the one or more data sets; and

6   means for synchronizing the transaction boundaries and combining said

7   multiplicity of results thereby completing said processing.

1   27.   The system of claim 26, wherein the means for setting transaction

2   boundaries defines the transaction boundaries based on the row count of the data

3   records.

1   28.   The system of claim 26, wherein the means for setting transaction

2   boundaries defines the transaction boundaries based on the time stamp of the data

3   records.

1   29.   The system of claim 26, wherein the means for setting transaction

2   boundaries defines the transaction boundaries based on the result of a previous

3   data transformation.

1   30.   The system of claim 26, the means for setting transaction boundaries

2   comprises defines the transaction boundaries based on a user-defined logic,

3   wherein the user-defined logic is one or more rules defined by a user.

1   31.   The system of claim 30, wherein the user-defined logic is on a real-

2   time basis.

1   32.   The system of claim 30, wherein the rules comprise one or more

2   tables in a database.

1   33.   The system of claim 30, wherein the rules comprise one or more

2   statements defining relationships and actions in a suitable programming language.

1   34.   The system of claim 33, wherein the suitable programming language

2   is one of Generation III Languages (3GL), Generation IV Languages (4GL), and

3   Generation V Languages (5GL).

1   35.   The system of claim 33, wherein the suitable programming language

2   is an expert system tool.

1   36.   The system of claim 26, wherein said processing comprises at least

2   one of insert, update, delete, aggregation, rank, sort, sequence, and join.

1   37.   A system for performing a series of transformations on a plurality of

2   data records, wherein said series of transformations initiate at a source and

3   conclude at a target, said system comprises:

4   means for setting transaction boundaries among said plurality of data

5   records at the source thereby dividing the plurality of data records into one or

6   more data sets;

7   means for propagating the transaction boundaries through the series of

8   transformations from the source to the target;

9   means for performing said series of transformations based on the one or

10   more data sets thereby producing a multiplicity of results from said series of set-

11   based transformations; and

12   means for synchronizing the transaction boundaries and combining the

13   multiplicity of results thereby completing the series of transformations.

1   38.   The system of claim 37, wherein the means for setting transaction

2   boundaries defines the transaction boundaries based on the row count of the data

3   records.

1   39.   The system of claim 37, wherein the means for setting transaction

2   boundaries defines the transaction boundaries based on the time stamp of the data

3   records.

1   40.   The system of claim 37, wherein the means for setting transaction

2   boundaries defines the transaction boundaries based on the result of a previous

3   data transformation.

1   41.   The system of claim 38, the means for setting transaction boundaries

2   defines the transaction boundaries based on a user-defined logic, wherein the user-

3   defined logic is one or more rules defined by a user.

1   42.   The system of claim 41, wherein the user-defined logic is on a real-

2   time basis.

1   43.   The system of claim 41, wherein the rules comprise one or more

2   tables in a database.

1   44.   The system of claim 41, wherein the rules comprise one or more

2   statements defining relationships and actions in a suitable programming language.

1   45.   The system of claim 44, wherein the suitable programming language

2   is one of Generation III Languages (3GL), Generation IV Languages (4GL), and

3   Generation V Languages (5GL).

1   46.   The system of claim 44, wherein the suitable programming language

2   is an expert system tool.

1   47.   The system of claim 37, wherein the means for propagating the

2   transaction boundaries comprises setting and maintaining one or more transaction

3   queues capable of defining the boundaries of the data sets.

1   48.   The system of claim 47, wherein said transaction queues comprise

2   one or more tables in a database.

1   49.   The system of claim 47, wherein said transaction queues are

2   maintained in a computer memory.

1   50.   The system of claim 37, wherein said series of transformations

2   comprise at least one of insert, update, delete, aggregation, rank, sort, sequence,

3   and join.

1   51.   A computer program product implementing the system of claim 26.

1   52.   A computer program product implementing the system of claim 37.

1   53.   A computer readable medium having recorded thereon program

2   instructions which when processed by a computer are capable of executing a

3   method for processing a plurality of data records, said method comprising:

4   setting transaction boundaries among said plurality of data records thereby

5   dividing the plurality of data records into one or more data sets;

6   processing each of said data set thereby producing a multiplicity of results

7   from the one or more data sets; and

8   completing the processing of said plurality by synchronizing the transaction

9   boundaries and combining said multiplicity of results.

1   54.   A computer readable medium having recorded thereon program

2   instructions which when processed by a computer are capable of executing a

3   method for performing a series of transformations on a plurality of data records,

4   said method comprising:

5   setting transaction boundaries among said plurality of data records thereby

6   dividing the plurality of data records into one or more data sets;

7   propagating the transaction boundaries through said series of

8   transformations;

9   performing said series of transformations based on the one or more data

10   sets thereby producing a multiplicity of results from said series of set-based

11   transformations; and

12   completing the series of transformations by synchronizing the transaction

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13   boundaries and combining said multiplicity of results.